

5.0 LONG-TERM IMPLICATIONS **OF THE PROPOSED PROJECT**

5.1 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES THAT WOULD BE INVOLVED IN THE PROPOSED ACTION SHOULD IT BE IMPLEMENTED

The CEQA Guidelines (14 CCR 15000 et seq.) mandate that the SEIR must address any significant irreversible environmental changes which would be involved in the proposed action should it be implemented (CEQA Guidelines Section 15126.2(c)). The following discussion applies to both the co-located and stand-alone operating conditions. An impact would fall into this category if:

- The project would involve a large commitment of non-renewable resources
- The primary and secondary impacts of the project would generally commit future generations to similar uses
- The project involves uses in which irreversible damage could result from any potential environmental incidents associated with the project
- The proposed consumption of resources is not justified (e.g., the project results in wasteful use of energy).

Construction of the proposed Seawater Desalination Project at Huntington Beach would commit the project site and associated off-site components to the uses identified in the project description for the foreseeable future, and thereby would limit the range of other uses that could be implemented on the subject properties in the future. As the desalination site, surrounding properties, pump stations, bypass station, metering stations, and off-site water transmission pipeline routes are developed within urbanized areas, they are not viable for agricultural uses and do not contain any significant natural features that should be preserved for public recreation or open space purposes. They also do not contain important natural resources that should be either conserved or reserved for other productive purposes, or that contain any features of significant cultural or historical value.

The off-site OC-44 underground booster pump station would be situated within an Orange County Resource Preservation Easement. Although the Resource Preservation Easement is subject to various development restrictions, the pump station would be situated in an area of the easement where limited development is allowed. It should also be noted that the proposed pump station site is immediately to the west of (but not within) the reserve area of the Central and Coastal Reserve Design Subregions of the Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP) of Orange County (Nature Reserve of Orange County 2005). The proposed pump station site is currently undeveloped and includes 0.5 acre of native vegetation known to support numerous species of wildlife and may include areas within the jurisdiction of the U.S. Army Corps of Engineers (ACOE) or California Department of Fish and Game (CDFG) according to Appendix B, Results of the Biological Constraints Survey for the OC-44 Underground Booster Pump Station Project Site, of the SEIR. Construction of the proposed OC-44 pump station has the potential to impact biological resources at the proposed site (neither of the optional OC-44 underground booster pump station sites contains sensitive species or habitats, and neither has jurisdictional

wetlands/waters). However, mitigation measures are included to ensure that avoidance of direct impacts is accomplished with final design (refer to mitigation measures CON-38 through CON-46 in Section 4.9, Construction). Once built, the pump station would be placed entirely underground and would be subject to development restrictions protecting the integrity of on-site biological resources.

Determining whether the proposed project may result in significant irreversible environmental changes requires a determination of whether key resources would be degraded or destroyed such that there would be little possibility of restoring them. No such degradation or destruction of resources is anticipated as a result of the proposed project. While the project would represent a long-term commitment of the desalination project site and associated off-site components to the proposed desalination uses, such uses are consistent with applicable goals and policies of the City's General Plan and would enhance City and regional water resources while facilitating their management. No identified important or sensitive natural resources exist at the desalination facility site. Further, no important natural resources would be lost as a result of project implementation. The local marine environment surrounding the Huntington Beach Generating Station (HBGS) outfall may experience long-term changes in regards to increased salinity due to the proposed facility's concentrated seawater discharge, but the analysis contained in this SEIR determined that the impacts to biological resources would be less than significant (see Section 4.10, Ocean Water Quality and Marine Biological Resources). Various natural resources, in the form of construction materials and energy resources, would be used in the construction of the project, but their use is not expected to result in significant long-term shortfalls in the availability of these resources. Energy consumed by the project is not likely to contribute to intermittent statewide energy shortfalls because operations of the facility can be curtailed during incidents of peak electric grid overload. Proposed consumption of energy is not considered wasteful. Thus, the project presents no possibility of significant irreversible environmental changes.

5.2 GROWTH-INDUCING IMPACTS OF THE PROPOSED ACTION

This section discusses the ways in which the seawater desalination project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in Orange County.

CEQA REQUIREMENTS FOR GROWTH-INDUCEMENT ANALYSIS

The CEQA Statute (California Public Resources Code Section 21000 et seq.) requires that an environmental impact report shall include a detailed statement setting forth "the growth-inducing impact of the proposed project" (Public Resources Code Section 21100(b)(5)). The CEQA Guidelines provide the following direction for the required discussion: "Discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment" (14 CCR 15126.2(d)).

Identification of the "surrounding environment" in which this project may foster growth is obviously a key factor in the analysis. The "surrounding environment" or "service area" for the proposed project has been identified as Orange County.

Development of raw, natural land for new homes, industry, or a commercial center is a clear example of directly converting the natural environment for use by man, and such projects are considered to be directly "growth inducing." Projects that are directly growth inducing convert the

natural environment and develop structures and other physical features for the purposes of providing places to live, work, shop, recreate, and grow food for an expanding population within an area. Examples of projects that are directly growth inducing include projects that convert agricultural land to rural or urban development and projects that replace existing rural, suburban, or urban development with uses that significantly increase the level of human activity in a given area.

The CEQA Guidelines and controlling CEQA case law indicate that infrastructure projects (like the proposed project) are different. Infrastructure projects may have characteristics “which would remove obstacles to population growth” or “which may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively” (14 CCR 15126.2(d)). In the specific example cited by the CEQA Guidelines, “a major expansion of a waste water treatment plant might ... allow for more construction in service areas” (14 CCR 15126.2(d)). Infrastructure projects (like the proposed project) may be found to be indirectly growth inducing.

California courts have recognized that there is a different potential for indirect growth inducement when the “sole reason to construct” an infrastructure improvement project “is to provide a catalyst for further development in the immediate area” (*City of Antioch v. City Council of the City of Pittsburg* (1986)) as compared to the analysis required for a project “designed to accommodate a development whose growth-inducing impact had already been addressed” (*Merz v. Monterey County Board of Supervisors*; California Court of Appeal 1983). Accordingly, this section examines the extent to which the proposed project would provide a catalyst for further development in Orange County as compared to the extent to which the proposed project has been designed to accommodate existing demand and planned development.

Finally, the CEQA Guidelines admonish that “[i]t must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment” 14 CCR 15126.2(d)). Therefore, the analysis in this section endeavors to present factual information without engaging in such assumptions.

DEFINITION OF GROWTH

“Growth” is measured in terms of increases in the numbers of houses, residents, employees, businesses, and other quantifiable units within a particular area. Resulting growth statistics are readily available from various sources, such as the U.S. Census Bureau, state Department of Finance, and regional and local governments.

Population growth has two basic causes: (1) the net difference between birth and death rates in a given area (natural increase), and (2) the net effect of in- and out-migration within an area. Birth and death rates are relatively uniform across the U.S., although there is the potential for aberrations in the local birth and death rate based on the specific environmental and social characteristics of a given area. Migration is directly related to growth catalysts or constraints, which are the result of the natural environmental conditions of a given area (e.g., its beauty and climate), as well as the manmade and social features of the community (e.g., strength of the local employment base, desirability of living conditions, quality of schools, community amenities, and other quality of life issues). In this case, CEQA requires a discussion of the ways in which a proposed project could be a catalyst for migration into the environment surrounding that project.

Growth Catalysts and Constraints

Catalysts and constraints to growth can effect (1) whether or not growth occurs in a given area and (2) the rate at which growth occurs. Even if there is latent growth potential in a given area, the area may not experience any growth, other than natural population increase, because of specific constraints. Such constraints could be temporary and easily removed, such as a short-term lack of sewage-treatment capacity; or long-term in nature and difficult to address, such as high air pollution levels in an air basin that discourage in-migration.

Generally, naturally occurring growth catalysts/constraints (e.g., natural topography, location of rivers, lakes, steep slopes, fault zones, sensitive habitats) are fairly straightforward and easy to define. Manmade catalysts and constraints typically are a consequence of a combination of economic forces (e.g., job availability, pay scales, housing costs, development incentives) and infrastructure provision (e.g., roadways, public utilities, public services) that combine in a way that makes an area appear more or less attractive than another area. In some cases, manmade factors may interact with the natural environment to create growth catalysts (e.g., the design of new development within a desirable natural setting) or constraints (e.g., air pollution combined with a poor climate) affecting decisions to migrate to an area.

This relative attractiveness of the combined natural and manmade environment on the local, regional, state, or national level influences population growth. Areas that have healthy environmental factors, strong growth catalysts, and minimal or resolvable constraints would experience growth in the form of net in-migration.

GOVERNMENT'S ROLE REGARDING GROWTH

Government is the vehicle through which many growth catalysts and constraints are created, increased, decreased, or removed. While local cities and counties primarily play this role, service and utility agencies are also involved. The relationship between an area's growth catalysts, constraints, and government policy actions also facilitates or hinders growth.

Cities and Counties

In California, cities and counties are required to prepare and maintain "a comprehensive, long-term general plan for the physical development of the county or city, and of any land outside its boundaries which in the planning agency's judgment bears relation to its planning" (California Government Code Section 65300). Under state law, it is the responsibility of cities and counties to define the availability of land for future development in terms of the permitted location and intensity of residential, commercial, industrial, institutional, recreational, and other types of development. State requirements for the preparation and content of general plans, as well as CEQA requirements for their review, are intended to ensure that a city or county's land use plans are consistent with their circulation plans; are consistent with the agencies' plans for environmental management, public safety, and provision of housing for all economic segments of the community; and are supported by adequate public services and facilities. Overall, city and county general plans establish the governmental policies as to how growth catalysts and constraints are managed within each community.

Therefore, a city or county manages growth by affecting, influencing, and controlling growth catalysts and constraints. Through implementation of general plan policies and related

implementation strategies, growth catalysts are either expanded or contracted. This effect can result in many outcomes, such as high rates of growth resulting from implementation of aggressive development plans or, conversely, low to no growth resulting from implementation of slow-growth development plans. Similarly, growth can be managed by either removing or leaving in place constraints to growth. For example, a completely built-out city that includes mountainous terrain can remove a growth constraint by enacting policies that allow development of hillsides previously prohibited from development, or it can choose to keep the existing hillside development prohibition in place, thereby maintaining the growth constraint.

Service and Utility Agencies

In California, public service and utility agencies function on a “would serve” basis, meaning that they are responsible for providing services and utilities to accommodate growth that is planned to occur in their service area. In providing these services and utilities, these agencies are responding to growth pressures that are ultimately managed or controlled by the cities and counties in their service area. For example, water purveyors in urban areas are required by law to prepare and adopt urban water management plans (UWMPs), with 20-year planning horizons, in order to demonstrate how they would accommodate the water service demands in their service area. These UWMPs must be updated every 5 years and are required to estimate water supply needs for their service area in normal, dry, and drought years.

Some see service and utility agencies as playing a dual role, by accommodating growth and by removing constraints to growth that result in the creation of a growth catalyst. Using the example of a capacity increase at a wastewater treatment facility, service agencies can create a growth catalyst that meets demand for growth coming from a particular city. Without the wastewater treatment facility capacity increase, a constraint to growth would remain. While the provision of these services and utilities can function as a catalyst to growth, or the lack of providing them can function as a constraint to growth, the demand for growth is generally dictated by the planning activities of cities and counties in their service area.

Special Legislative Requirements for New Developments

The California State Legislature recognized the correlation between development and water supply when it enacted Senate Bill (SB) 610 and SB 221 in the 2001 legislative session. The bills require that cities and counties consult with the water agency serving a new development project of over 500 dwelling units (or similar large projects) to determine whether water supplies are sufficient to serve the project prior to approval.

In addressing water supply availability for new development projects, SB 610 augments the CEQA process to definitively establish water availability. SB 610 requires that the public water supplier must prepare a “water supply assessment” (WSA) that contains the following (SB 610):

- Identification of existing and anticipated water supply entitlements, water rights, or water service contracts and a historical description of the quantities of water received by the public water supplier in prior years.
- Identification of the source of supply for the new development project and, if it is a new source, other competing purveyors that may receive water from the new source must also be identified.

- If the identified water supply includes groundwater, additional factors such as groundwater characteristics and sufficiency of the supply must be disclosed to establish proper use of the resource.

The public water supplier's UWMP is the main planning tool used in preparing a WSA for new development projects. If the demands expected from the new development are already accounted for in the UWMP, the UWMP may be used—in whole or in part—to establish water supply availability under normal and drought conditions. If the water demands for a new project are not already accounted for in the UWMP, SB 221 requires the public water supplier to provide “written verification” of “sufficient water supplies” (SB 221) for the new project, as well as proof of the availability of water supply. In most cases, the WSA prepared under SB 610 would meet the additional requirements of SB 221.

Desalination Task Force Recommendations

Assembly Bill (AB) 2717 called for the state Department of Water Resources (DWR) to establish a Desalination Task Force (“Task Force”) to look into, among other things, potential opportunities for desalination of seawater in California (AB 2717). The Task Force completed its mission in October 2003, after 6 months of deliberations. DWR prepared recommendations with significant input from Task Force members. Direction on the evaluation of growth related impacts were included among those recommendations. DWR recommends that seawater desalination projects be evaluated:

based upon adopted community General Plans, Urban Water Management Plans, Local Coastal Plans, and other approved plans that integrate regional planning, growth and water supply/demand projections. Environmental reviews should ensure that growth related impacts of desalination projects are properly evaluated.

ORANGE COUNTY GROWTH PROJECTIONS

The Center for Demographic Research (CDR) at California State University, Fullerton, prepares biennial socioeconomic growth projections for Orange County. The Orange County Projections 2006 (OCP-2006) were adopted by the Orange County Council of Governments (OCCOG) in November 2006 and are the most recent projections available. (The OCP-2008 report is currently being reviewed by 35 independent jurisdictions prior to finalization and is expected to be released later in 2010.)

OCP-2006 provides information on growth in population, employment, and housing between 2003 and 2035. According to the OCP-2006, from 2003 to 2035 Orange County is expected to experience a 22% increase in population (654,669 additional people) and a 26% increase in the number of jobs (413,500 additional jobs), but only a 15% increase in the number of dwelling units (154,000 additional dwelling units). Based on the projected increase in population compared to the flatter growth in the number of housing units projected, densities in Orange County are anticipated to intensify. The projections are shown in Table 5-1, Orange County Projections: 2003–2035.

TABLE 5-1
ORANGE COUNTY PROJECTIONS: 2003–2035

	2003	2015	2025	2035
Population	2,999,319	3,451,757	3,586,285	3,653,988
Employment	1,568,407	1,837,771	1,933,058	1,981,901
Housing	997,614	1,106,607	1,136,564	1,151,587

Source: CDR 2006.

Note: Based on conversations with the CDROCP-2008 are not approved or available for public use at this time. Therefore, the most recently approved projections (2006) have been utilized for this analysis.

Population

According to the CDR, the population of Orange County was 2,999,319 in 2003. The CDR estimates an increase in Orange County's population to 3,451,757 in 2015 and 3,586,285 in 2025, and 3,653,988 in 2035.

Employment

The proposed project site is currently occupied with several fuel storage tanks. The existing facility does not require the employment of any personnel. Implementation of the seawater desalination project would generate minor short-term and nominal long-term employment within the City. The proposed facility would employ a total of eighteen people, with five to seven people working on site Monday through Friday and a minimum of two people on duty during swing shifts, graveyard shifts, and weekends. Project implementation would not appreciably affect the CDR-projected employment figure of 1,837,771 jobs in the year 2015 for Orange County.

Housing

The seawater desalination project would occur within an industrial area and would not directly involve the construction of new housing or the relocation of existing housing in the City. However, as an infrastructure improvement project that would provide a new source of potable water supply (desalinated seawater) for Orange County, the project's potential to indirectly foster the construction of new housing must be analyzed County-wide.

The "Growth Assessment and General Plan Evaluation for Anticipated Infill and New Residential Development in Orange County, California," prepared by LSA Associates, Inc., in December 2009 ("Growth Assessment and General Plan Evaluation") has been attached to this SEIR as Appendix X, Growth Assessment and General Plan Evaluation. The Growth Assessment and General Plan Evaluation utilizes several complimentary approaches to determine the planned buildout of dwelling units in Orange County, analyzing the housing elements and related elements from the general plans of all jurisdictions in the County as well as analyzing CDR projections for each of the ten regional statistical areas (RSAs) for the County. The Growth Assessment and General Plan Evaluation also specifically reviews 24 residential development projects of over 500 dwelling units that are currently proposed in Orange County.

Appendix X, Growth Assessment and General Plan Evaluation, analyzed the housing elements and related elements from the general plans of all jurisdictions in the County. After compiling information from 34 cities and the unincorporated territory in the County, the Growth Assessment and General

Plan Evaluation identified that a total of 1,191,511 dwelling units are projected for final buildout of Orange County (Table 5-2, General Plan Housing Element Summary). Without relying on additional updated information, the general plan review might provide an unreliable projection of the total dwelling units to be built in Orange County because the general plans were written as independent governing documents by different jurisdictions and, as shown on Table 5-2, the general plans were written in different years. However, when the total number of dwelling units estimated for final buildout in the general plans for each jurisdiction is added together (1,191,511), the resulting number corresponds to the OCP-2006 projections in Table 5-1 (the 1,151,587 dwelling units projected in 2035 is slightly less than the final buildout number in the general plans).

**TABLE 5-2
GENERAL PLAN HOUSING ELEMENT SUMMARY**

JURISDICTION	GENERAL PLAN ELEMENT	YEAR OF GENERAL PLAN ELEMENT	TOTAL HOUSING ESTIMATES AT BUILDOUT PER GENERAL PLAN	2009 CALIFORNIA DEPARTMENT OF FINANCE EXISTING HOUSING ESTIMATES	TOTAL REMAINING HOUSING UNITS TO BE BUILT PRIOR TO BUILDOUT OF JURISDICTION*
Aliso Viejo	Community Profile	2004	20,112	18,123	1,989
Anaheim	Land Use Element	2004	131,385	102,086	29,299
Brea	Land Use Element	2003	16,532	14,588	1,944
Buena Park	Housing Element	2001	24,285	24,417	(-132)
Costa Mesa	Housing Element	2000	43,122	41,891	1,231
Cypress	Land Use Element	2008	17,415	16,615	800
Dana Point	Housing Element	2000	16,495	15,955	540
Fountain Valley	Housing Element	2000	19,290	18,876	414
Fullerton	Housing Element	2001	55,831	47,092	8,739
Garden Grove	Housing Element	2009	54,296	47,597	6,699
Huntington Beach	Housing Element	2000	76,514	78,049	1,465
Irvine	Housing Element	2003	61,255	79,039	(-17,784)
Laguna Beach	Housing Element	2001	13,083	13,268	(-185)
Laguna Hills	General Plan EIR	2009	11,643	11,153	490
Laguna Niguel	Planning Department Representative	2009	24,962	24,982	(-20)
Laguna Woods	Land Use Element	2003	13,365	13,629	(-264)
Lake Forest	Housing Element	2008	32,022	19,954	12,068
La Habra	Housing Element	2003	19,271	26,384	(-7,113)
La Palma	Land Use Element	2008	5,450	5,131	319
Los Alamitos	Housing Element	2009	4,633	4,423	210
Mission Viejo	Land Use Element	2000	34,465	34,278	187
Newport Beach	Housing Element	2006	49,968	43,477	6,491
Orange	Housing Element	2001	45,846	44,491	1,355
Placentia	Housing Element	2002	16,182	16,350	(-368)
Rancho Santa Margarita	Housing Element	2002	17,170	16,792	378
San Clemente	Land Use Element	2003	25,983	27,251	(-1,268)

TABLE 5-2 (CONTINUED)

JURISDICTION	GENERAL PLAN ELEMENT	YEAR OF GENERAL PLAN ELEMENT	TOTAL HOUSING ESTIMATES AT BUILDOUT PER GENERAL PLAN	2009 CALIFORNIA DEPARTMENT OF FINANCE EXISTING HOUSING ESTIMATES	TOTAL REMAINING HOUSING UNITS TO BE BUILT PRIOR TO BUILDOUT OF JURISDICTION*
San Juan Capistrano	Land Use Element	1999	12,522	11,884	638
Santa Ana	Planning Department Representative	2009	65,410	75,856	(-10,446)
Seal Beach	Housing Element	1990	14,334	14,542	(-208)
Stanton	Housing Element	2008	18,537	11,199	7,338
Tustin	Housing Element	2008	29,821	26,215	3,606
Villa Park	Housing Element	2001	2,066	2,023	43
Westminster	Planning Department Representative	2009	27,634	27,444	190
Yorba Linda	Planning Department Representative	2009	25,000	21,929	3,071
Unincorporated	Housing Element	2005	142,632	38,328	104,304
Subtotal			1,191,511	1,035,491	134,828

* per General Plan Estimates and California Department of Finance Estimates

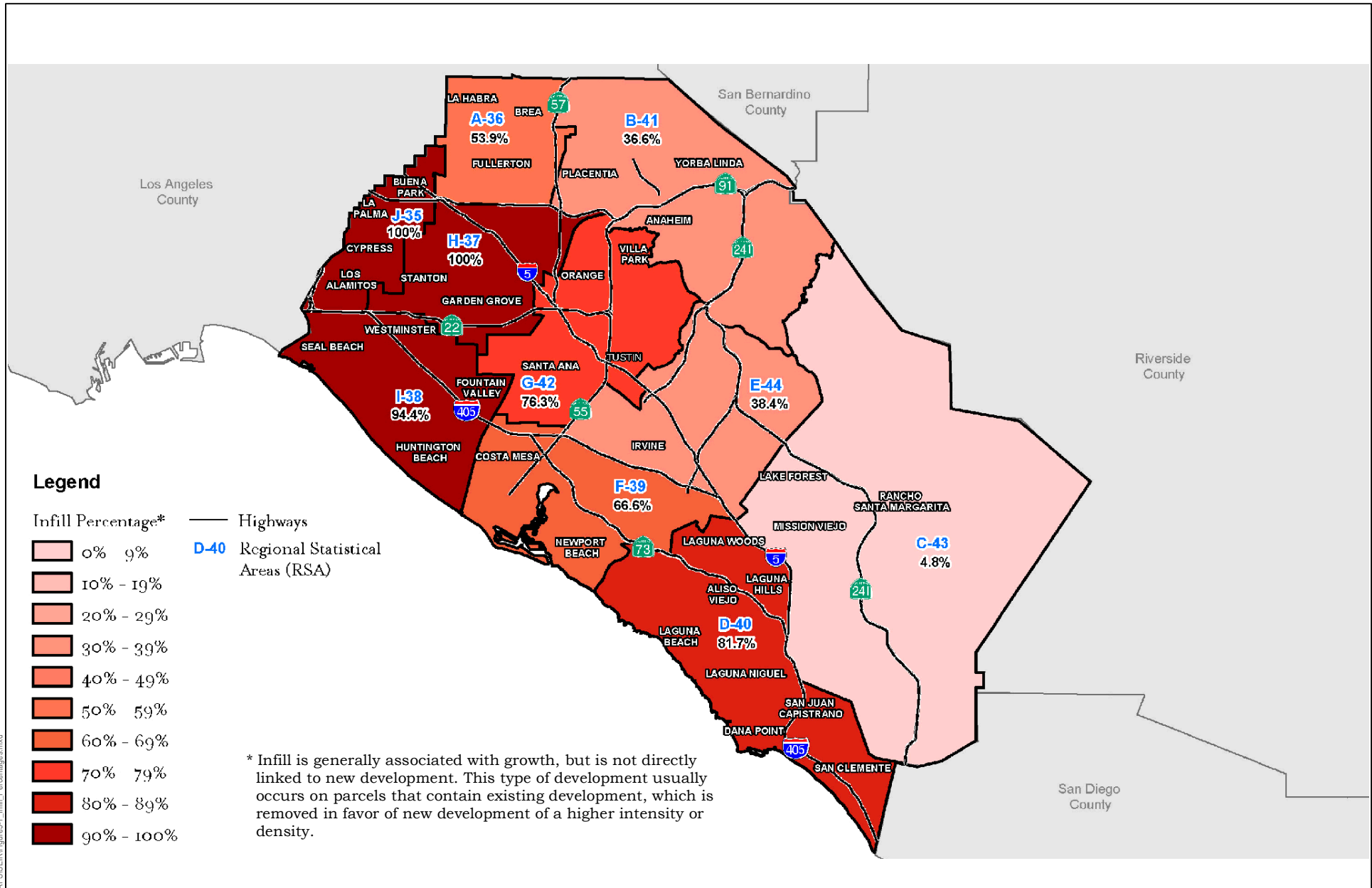
Note: All housing estimates include proposed infill development. All negative totals (notes in parentheses) are counted as zero and not subtracted from the total.

To further validate information relating to construction of additional housing in Orange County, the Growth Assessment and General Plan Evaluation compared the 2009 California Department of Finance (DOF) existing housing estimates to the general plan estimates on a jurisdiction-by-jurisdiction basis. As shown in Table 5-2, the buildout estimate for most jurisdictions continues to be up to date. However, in the cities of Buena Park, Irvine, Laguna Beach, Laguna Niguel, Laguna Woods, La Habra, Placentia, San Clemente, Santa Ana and Seal Beach, the general plan buildout estimates are out of date and have already been surpassed, when compared with the 2009 DOF existing housing estimates.

When the 2009 DOF existing housing estimates are subtracted from the buildout estimates in the general plans on a jurisdiction-by-jurisdiction basis (ignoring the jurisdictions where the estimates have already been surpassed), an estimated 134,828 dwelling units remain to be built in Orange County. This number also corresponds to the CDR projections. As indicated in Table 5-1, CDR projects that the total dwelling unit growth from 2003 to 2035 for Orange County is anticipated to be 153,973 dwelling units (the difference between 1,151,946 and 997,973). Obviously, some of those dwelling units have already been constructed, because the CDR projection begins with a 2003 count of 997,614 dwelling units while the DOF provides a 2009 count of 1,035,491 dwelling units, leading to the conclusion that 37,877 additional dwelling units have been constructed in Orange County in the last 6 years. When these already-constructed dwelling units are subtracted from the CDR projection, the projection drops to 116,096 dwelling units to be constructed in Orange County by 2035. This projection corresponds to the final buildout number in the general plans of 134, 828.

Under direction from the Orange County Board of Supervisors, ten RSAs for the County were established in 1977. CDR currently manages growth forecasting and projections for the ten RSAs. In its most recent analysis, OCP-2006, CDR found that 86,613 dwelling units (approximately 56%) are anticipated to be built in infill areas of the County, and that seven of the ten RSAs are projected to have more infill development than new development. The percentage of infill development by RSAs is shown in Figure 5-1, Infill Percentages by Regional Statistical Areas.

In contrast, almost all of the anticipated new development in Orange County (meaning the building of residential projects in areas that have not been urbanized, including undeveloped and agricultural land) would occur in three RSAs: B-41 (10,379 dwelling units), C-43 (19,117 dwelling units) and E-44 (23,408 dwelling units). Of the 67,360 projected new development dwelling units to be built from 2003 to 2035, 52,904 (79 % of the total) would be built in those three RSAs. RSA B-41 includes the Anaheim Hills and East Orange areas, while RSAs C-43 and E-44 include most of the inland (non-coastal) portions of Irvine and South Orange counties. Several large tracts of vacant land remain in those areas. Therefore, it is not surprising that those are the areas where the majority of the County's proposed future residential development projects with over 500 dwelling units are located, as shown in Table 5-3, Proposed Future Residential Development Projects in Orange County (Over 500 Dwelling Units).



SOURCE: LSA 2009

6483-01
MAY 2010

Seawater Desalination Project at Huntington Beach

FIGURE 5-1
Infill Percentages by Regional Statistical Areas

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**TABLE 5-3
PROPOSED FUTURE RESIDENTIAL DEVELOPMENT PROJECTS
IN ORANGE COUNTY (OVER 500 DWELLING UNITS)**

PROJECT NO.	PROPOSED NEW RESIDENTIAL DEVELOPMENT PROJECTS	DWELLING UNITS	WATER SUPPLIER	WATER SUPPLY IDENTIFIED ¹
1	Mountain Park	2,500	City of Anaheim	Yes
2	Lennar's A-Town Metro	2,681	City of Anaheim	Yes
3	Lennar's A-Town Stadium	878	City of Anaheim	Yes
4	The Gene Autry Experience Project	1,208	City of Anaheim	Yes
5	Alexan Orangewood	689	City of Anaheim	Yes
6	Central Park Village	540	City of Brea	Pending ²
7	La Floresta Development Proposal	1,335	Metropolitan Water District and CDWC	Yes
8	Beach and Orangethorpe Mixed Use Project	1,000	City of Buena Park	Yes
9	North Costa Mesa High Rise	1,269	Mesa Consolidated Water District (MCWD)	Yes
10	West Coyote Hills	760	City of Fullerton	Yes
11	The Village at Bella Terra	713	City of Huntington Beach	Yes
12	Orange County Great Park	8,550	Irvine Ranch Water District (IRWD)	Yes
13	Planning Area 40/PA12	3,918	IRWD	Yes
14	Draft Irvine Business Complex Vision Plan and Mixed Use Overlay	16,191	IRWD	Yes
15	Lake Forest Opportunities Study	5,415	IRWD	Yes
16	Newport Banning Ranch	1,375	City of Newport Beach Water Department	Yes ³
17	East Orange-Santiago Hills II	2,1000	IRWD/Golden State Water Division	Yes
18	The Block at Orange Expansion	500	City of Orange Water Division	Yes
19	Santa Fe Depot Specific Plan Update	506	City of Orange Water Division	Pending ⁴
20	Westgate Specific Plan	1,560	Golden State Water Company	Pending ⁵
21	Tustin Base (Tustin Legacy	4,601	City of Tustin/IRWD	Yes
22	University of California, Irvine, Campus Housing	850	IRWD	Yes
23	Tonner Hills	810		Yes
24	Rancho Mission Viejo Ranch Plan	14,000	Santa Margarita Water District	Yes

Source: LSA Associates, Inc., 2009, based on review of environmental impact reports for individual projects and personal correspondence.

Notes:

- ¹ The Huntington Beach Desalination Project was not identified as a water supply for these projects. Therefore, these projects are not reliant on the Huntington Beach Desalination Project for water supply. Details on the WSAs for each project are contained in Appendix X, Growth Assessment and General Plan Evaluation
- ² The project-specific water supply assessment will not be available for this project until summer 2010. However, it is anticipated that the City of Brea will serve the project with existing water entitlements. See discussion 6 in Appendix X, Growth Assessment and General Plan Evaluation, for additional information (Telephone correspondence with Shaveta Sharma, City of Brea Planning Department, December 10, 2009).
- ³ The project-specific water supply assessment for this project is not available. However, the project is included in the City's General Plan projections, and Municipal Water District of Orange has indicated that there is adequate supply to serve land uses identified in the General Plan. It is anticipated that if the area is annexed into the City, the City would provide water service to the area using existing entitlements. See discussion 16 in Appendix X, Growth Assessment and General Plan Evaluation, for additional information.

- ⁴ The project-specific water supply assessment will not be available for this project until mid-2010. However, it is anticipated that the water service will be provided by the City of Orange using existing water entitlements. See discussion 19 in Appendix X, Growth Assessment and General Plan Evaluation, for additional information (Email correspondence with Anna Pehoushek, City of Orange Planning Department, December 10, 2009).
- ⁵ It is anticipated that this project would be serviced by Golden State Water Company; however, a project-specific water supply assessment is not currently available. Please see discussion 20 in Appendix X, Growth Assessment and General Plan Evaluation, for additional information (Phone conversation with Mike McConaha, City of Placentia Planning Department, December 16, 2009).

ORANGE COUNTY WATER CONSUMPTION PROJECTIONS

To determine whether the seawater desalination project may be growth inducing, projections regarding water consumption habits in Orange County must be understood in addition to the projections for growth in population, employment and housing. The Desalination Task Force recommends a review of applicable UWMPs and “other approved plans that integrate regional planning, growth and water supply/demand projections.” Several plans provide relevant regional information: the California Water Plan prepared by the DWR, the 2005 Regional Urban Water Management Plan and the related Integrated Resource Plan Update prepared by the Metropolitan Water District (MWD), and the 2005 Regional Urban Water Management Plan prepared by the Municipal Water District of Orange County (MWDOC). As summarized in Section 3.4, Project Need and Objectives, each of these regional water supply plans includes seawater desalination as a projected future supply.

The California Water Plan Update 2009 projects that a combination of 13 new seawater desalination facilities would provide up to 257,000 acre-feet of California’s future water supply (see Table 3-2 in Section 3.5, Project Need and Objectives). In Southern California, MWD has set a seawater desalination water supply target of 150,000 acre-feet (part of an overall local water production target of 750,000 acre-feet). Currently, MWD has received proposals for five seawater desalination projects that collectively could produce about 142,000 acre-feet per year. The 56,000 acre-foot-per-year Seawater Desalination Project at Huntington Beach is not included in the 142,000 acre-feet of seawater desalination project proposals submitted to MWD to date, but it would still be considered an Orange County local project for purposes of meeting the overall 750,000 acre-foot local water production target. MWDOC’s 2005 Regional Urban Water Management Plan identifies seawater desalination as a planned for future water supply for Orange County, and MWDOC identifies the Seawater Desalination Project at Huntington Beach as one of “three proposed ocean desalination projects that could serve MWDOC and its member agencies with additional water supply” (MWDOC 2005, page 111).

All planned new development projects of 500 dwelling units or more that are approved or anticipated for Orange County are required by law to identify (and verify) the water sources available to serve those projects. None of the 24 planned new residential development projects of 500 dwelling units or more that were identified in the Growth Assessment and General Plan Evaluation have identified the Seawater Desalination Project at Huntington Beach as a source of water supply. In fact, the WSAs for 20 of the listed projects have identified water sources that are independent of the seawater desalination project, and the other 4 projects are not far enough along in the planning process to have identified a source of water supply (see Table 5-3).

POTENTIAL PROJECT-RELATED GROWTH-INDUCING IMPACTS

The seawater desalination project would provide a new source of potable water supply (desalinated seawater) producing 50 million gallons per day (mgd), or 56,000 acre-feet per year, of potable water for ultimate use within Orange County. However, as described in Section 3.0, Project Description,

the desalinated seawater would not be made directly available to end users. Instead, the project requires that the desalinated seawater produced by the seawater desalination project be delivered only to existing regional or local water purveyors in Orange County.

By April 30, 2010, in addition to an agreement through the OPA with the City of Huntington Beach, fifteen (15) retail water purveyors and MWDOC had each signed individual Letters of Intent indicating their conditional interest in entering purchase agreements with Poseidon to purchase specific amounts of desalinated seawater in each year that water is produced at the Seawater Desalination Project at Huntington Beach. Section 3.5 provides a list of the water purveyors that have signed a letter of interest with Poseidon or have otherwise shown interest in purchasing water. Because the entire 56,000 acre-feet of desalinated seawater to be produced by the project has been reserved, the growth-inducing impact of the project would depend entirely upon how those regional or local water purveyors allocate the desalinated seawater produced by the project.

Neither CEQA nor the CEQA Guidelines provide a specific methodology for determining whether a project like the proposed project would have growth-inducing impacts. One methodology would be to assume a scenario in which water produced by the seawater desalination project was directed by regional and local water purveyors entirely toward fostering unplanned growth in Orange County. At 200-gallon-per-day per capita water use, the project could supply water to 250,000 additional people, or approximately 8% more than Orange County's 3,000,000 current residents. When the County's population exceeds 3,600,000 residents in 2035 (see Table 5-1), the project would be able to serve approximately 7% of that projected population.

Allocating the project's water supply entirely toward fostering unplanned growth in Orange County is not realistic because existing water supply plans for Orange County identify desalinated seawater as one of the additional water sources already counted upon to meet the future supply needs for projected population increases. As set forth in Section 3.5, the Seawater Desalination Project at Huntington Beach provides a new source of supply to offset any imported water supply losses experienced by Orange County. Further, it is not anticipated that the purchase of water from a different supplier (Poseidon) by any of the affected water agencies would result in any changes to existing land use plans, growth projections or growth management policies of the local land use authorities within the respective service areas of those water agencies. Local water agencies purchase and deliver water to retail customers, and do not have direct authority over land use, and cannot approve or disapprove any changes in land use that would directly affect population projections.

Under CEQA, growth inducement is not considered necessarily detrimental, beneficial, or of little significance to the environment. Typically, the growth-inducing potential of a project would be considered significant if it fosters growth or a concentration of population in excess of what is assumed in pertinent general plans, or in projections made by regional planning agencies. In consideration of population/housing projections within the Orange County and the recognized need (in Orange County water supply plans) for seawater desalination as a supply source, any impacts would be less than significant.

The Growth Assessment and General Plan Evaluation (Appendix X) examines planned growth in Orange County and demonstrates that the potential water supply from the Seawater Desalination Project at Huntington Beach is not currently being relied upon to serve any of the planned new development projects of 500 dwelling units for which water supplies have been confirmed. The Project will not supply water in excess of what is already anticipated to meet future projected needs

in Orange County. Therefore, the Project will not cause significant growth-inducing impacts in Orange County.

However, the replacement of imported water supplies with desalinated water supplies produced by the Project could have the effect of making the imported water supplies that are displaced by the desalinated water supplies available for use outside of Orange County. Determination of the specific potential indirect growth-inducing effects outside of Orange County would require speculation that is beyond the scope of the environmental analysis for the Project.

5.3 CUMULATIVE IMPACTS

This section has been included in the SEIR to address the cumulative impacts associated with the proposed desalination project. In accordance with CEQA Guidelines (14 CCR 15130), an EIR shall address cumulative impacts of a project when the project's incremental cumulative effect is considerable, as defined in Section 15065(c). The discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as much detail as is provided for the effects attributable to the project alone. An EIR need not address cumulative impacts for which the project does not contribute. The discussion should be guided by the standards of practicality and reasonableness. The following elements are necessary for an adequate discussion of cumulative impacts.

1. Either:
 - A list of past, present, and probable future projects producing related or cumulative impacts including, if necessary, those projects outside the control of the agency, or
 - A summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or areawide conditions contributing to the cumulative impact.
2. A summary of the expected environmental effects to be produced by those projects with specific reference to additional information stating where that information is available, and
3. A reasonable analysis of the cumulative impacts of the relevant projects. An EIR shall examine reasonable, feasible options for mitigating or avoiding the project's contribution to any significant cumulative effects.

Additionally, the California Coastal Act (Public Resources Code Section 30000 et seq.) includes several policies requiring the evaluation of a proposed development's cumulative effects, including Section 30250(a), which states in part:

"New residential, commercial, or industrial development, except as otherwise provided in this division, shall be located... where it would not have significant adverse effects, either individually or cumulatively, on coastal resources."

In Section 30105.5, the California Coastal Act states, “‘Cumulatively’ or ‘cumulative effects’ means the incremental effects of an individual project shall be reviewed in conjunction with the effects of past projects, the effects of other current projects, and the effects of probable future projects.”

GEOGRAPHIC SCOPE OF CUMULATIVE IMPACT ASSESSMENT

The geographic area for each impact varies, depending on the nature of the impact and whether it is regional, such as growth-inducement, or local, such as noise. Thus, this SEIR evaluates cumulative impacts on both a local and regional level. First, the local analysis focuses primarily on cumulative impacts that may result with implementation of the proposed desalination facility along with other proposed projects within the City and surrounding cities. Second, the regional analysis focuses on cumulative impacts as a result of implementation of the proposed desalination facility along with other proposed desalination facilities, as well as other existing and proposed developments, along the Southern California coast. The regional cumulative impact analysis includes an evaluation of impacts to marine biology/water quality within the Southern California Bight, growth-inducement potential, and power production.

CUMULATIVE IMPACT METHODOLOGY

Local Cumulative Impact Analysis

The local cumulative impact discussion is based primarily on buildout of the City's General Plan, Zoning and Subdivision Ordinance, and General Plan EIR. These documents are contained in Section 2.7, Incorporation by Reference. The cumulative projects identified represent the currently known probable projects at the time of Draft EIR publication.

Cumulative impacts may be discussed in terms of project impacts, in combination with impacts anticipated for future development (including approved and planned development within the project area and surrounding affected area).

Quantification is difficult for cumulative impacts, as it would require speculative estimates of impacts including, but not limited to, the following: the geographic diversity of impacts (impacts of future development may affect different areas); variations in timing of impacts (many project impacts would occur at different times and would be reduced or removed before other impacts occurred); complete data are not available for all future development; and data for future development may change following subsequent approvals. However, every attempt has been made to make a qualitative judgment of the combined effect of, and relationship between, cumulative projects.

The CEQA Guidelines note that the discussion of cumulative impacts should be guided by standards of practicality and reasonableness (14 CCR 15130 (b)). Only those impacts that might compound or interrelate with those of the project at hand require evaluation. Potential cumulative impacts of the proposed project, in combination with cumulative development projects, are discussed below. Precise impacts of future development have been or would be discussed in appropriate environmental documentation (depending on what state of approval the project is in).

Local Cumulative Projects

In addition to incorporating by reference the cumulative impact discussion from the City of Huntington Beach General Plan EIR (City of Huntington Beach 1995), this SEIR has provided Table 5-4, Local and Regional Cumulative Project List, to ensure an adequate assessment:

**TABLE 5-4
 LOCAL AND REGIONAL CUMULATIVE PROJECT LIST**

NO.	PROJECT NAME AND LOCATION	MAJOR PROJECT FEATURES	APPROXIMATE DISTANCE FROM PROJECT SITE	STATUS
HUNTINGTON BEACH				
PROJECTS LOCATED WITHIN 1 MILE OF PROJECT SITE				
1	Beach/Edinger Corridor Specific Plan	The City of Huntington Beach has adopted a new vision and new zoning for properties along Beach Boulevard and Edinger Avenue. Specifications to guide land use and development intensity, site layout, building design, site landscaping, and signage are detailed in the Specific Plan. Land use and development standards have been drafted to replace preexisting zoning regulations and to assist the community to more effectively attract investment and improve the evolving image and identity of the City in these areas. Future development along the Specific Plan area is envisioned differently along different portions of the corridor; therefore, the Specific Plan area has been divided into five informal "districts." Additionally, three specific projects located within the Specific Plan area boundaries will be analyzed at project-level detail. Overall, the Specific Plan would allow for the addition of up to approximately 4,500 dwelling units, 738,400 square feet of retail, 350 hotel rooms, and 112,000 square feet of office uses.	N/A	Specific Plan approved March 1, 2010 FEIR Adopted December 2009
2	Downtown Specific Plan Update	The updated Specific Plan No. 5, Downtown Specific Plan, reconfigures the existing 11 Specific Plan districts into 7 districts; modifies development and parking standards; incorporates design guidelines; and provides recommendations for street improvements, public amenities, circulation enhancements, infrastructure and public facility improvements, and parking strategies.	N/A	Approved by City of Huntington Beach, under review by California Coastal Commission
3	Newland Street Widening	Widening of Newland Street between Pacific Coast Highway and Hamilton Avenue, including widening reinforced concrete bridge at Huntington Channel, installation of storm drain in Newland Street, and miscellaneous utility relocations.	Adjacent to project site	Under construction Draft MND – July 2006
4	Magnolia Pacific Specific Plan (also known as Ascon/Nesi Landfill)	Specific Plan allowing 502 dwelling units on 40 acres located on southwest corner of Hamilton Avenue and Magnolia Street. The California Department of Toxic Substances Control is the lead agency for cleanup of site and is currently working on remedial action plan/CEQA compliance.	0.7 mile	–California Department of Toxic Substance Control working on environmental documentation for clean-up of the site. Interim clean-up project

TABLE 5-4 (CONTINUED)

NO.	PROJECT NAME AND LOCATION	MAJOR PROJECT FEATURES	APPROXIMATE DISTANCE FROM PROJECT SITE	STATUS
				in process
5	Orange Coast River Park	Passive park that extends east from the AES power plant through Costa Mesa and Newport Beach.	N/A	Planning stages
6	Huntington Beach Wetlands Conservancy Restoration Plan	Restoration of degraded wetlands (130 acres) along the inland side of Pacific Coast Highway from the AES power plant east to Brookhurst Street.	1.0 mile	Restoration in progress
7	Edison Community Center	A master plan to convert Edison Community Park into a youth sports complex, including soccer fields and more lighted practice areas. The project may also include a skate park. Plans will also endeavor to address some of the methane issues at the park.	0.4 mile	Entitlements approved
8	Pacific City	A 31-acre mixed-use project, including 514 dwelling units, 250 hotel rooms, and 207,853 square feet of commercial space.	0.3 mile	Under construction
9	Waterfront Third Hotel	Approved master site plan allows for a 250-room hotel located between the existing Waterfront Hilton and the Hyatt Regency Huntington Beach Resort and Spa along Pacific Coast Highway.	1.0 mile	Planning stages
10	Beach Promenade	25,000-square-foot. addition to existing commercial center at 21022 Beach Boulevard.	1.0 mile	In review by the city
11	Blue Canvas	201-unit residential development and 2-acre park at Newland Street and Hamilton Avenue.	0.1 mile	Entitlement plan amendment in process
PROJECTS LOCATED MORE THAN 1 MILE FROM PROJECT SITE				
12	Pacific View Mixed Use Project	A three-story mixed-use project consisting of six residential units, 4,260 square feet of ground floor commercial, and 40-space surface and subterranean parking.	1.9 mile	Entitlements approved
13	Gun Range	The City will prepare an EIR for cleanup and reuse of the site located in Central Park east of the Sports Complex.	6.1 miles	EIR currently underway
14	Talbert Lake Water Quality Project	The Talbert Lake Diversion Project would divert up to 3 million gallons per day of urban runoff from the East Garden Grove Wintersburg Channel through pre-treatment devices, and into a 15-acre area in Central Park for treatment to remove pollutants, thereby significantly reducing pollutant loading to the coastal receiving waters. Project components will include a channel diversion structure, a pump station, a control system, existing pipeline inspection and rehabilitation, additional conveyance piping, pre-treatment, natural treatment systems, Talbert Lake rehabilitation, groundwater recharge enhancement, educational exhibit, and monitoring.	6.1 miles + conveyance system	Entitlements approved. Project on hold.
15	Brightwater	The Brightwater residential project consists of 349 single-family units on 105.3 acres of the upper bench portion of Bolsa Chica.	9.3 miles	Under construction

TABLE 5-4 (CONTINUED)

NO.	PROJECT NAME AND LOCATION	MAJOR PROJECT FEATURES	APPROXIMATE DISTANCE FROM PROJECT SITE	STATUS
16	Parkside Estates	111-unit single-family residential project with park/open space located on 50 acres on the west of Graham Street south of Skylab Road.	8.8 miles	The project has been approved by the City and is under review by the California Coastal Commission
17	Ocean Breeze Plaza	The project, located at the northwest corner of Beach Boulevard and Ronald Drive, involves construction of a new two-story, 9,544-square-foot, multiple-tenant retail/office building.	4.6 miles	Entitlements approved.
18	Rainbow Disposal	Master plan for Rainbow to expand the existing Material Recovery Facility and Transfer Station from 2,800 to 4,000 tons per day and construct a phased addition of 193,000 square feet of new building area.	5.6 miles	Entitlements approved
19	Harmony Cove Residential Development	The project involves the construction of a 15-unit residential project and a 27-slip marina at 3901 Skylab Road (former Percy Dock).	8.6 miles	The project is under review by the City
20	Warner Nichols	14,500-square-foot commercial building along Skylab Road. with vehicle storage on 2.8-acre site behind.	5.9 miles	In review by the City
21	The Ridge	Planned unit development with 22 dwelling units.	8.5 miles	In review by the City
22	Goodell	6.2-acre annexation and rezoning to Residential Low Density, Open Space – Parks and Recreation, and Coastal Conservation.	7.0 miles	Entitlements approved. GPA in review by City
23	Demesne Retail	10,000-square-foot new commercial center at 9500 Garfield Avenue.	3.7 miles	Entitlements approved
24	Red Oak/Amstar Project	Mixed-use project with 385 dwelling units and 10,000 square feet of commercial.	7.4 miles	Entitlements approved
25	Hotel	200-room, six-story hotel at 7872 Edinger Avenue.	6.6 miles	In review by the City
26	Garguis Mixed Use	Three-story, mixed-use development at 818 Pacific Coast Highway.	2.0 miles	In review by the City
27	Ward Garfield RV Storage	Establish specific plan and develop 557-space RV storage at 19118 Ward Street.	4.6 miles	In review by the City
28	CVS	14,400-square-foot drug store at 16922 Bolsa Chica Street.	8.3 miles	In review by the City
29	Newland Carwash	2,336-square-foot express car wash at 8471 Skylab Road.	5.9 miles	In review by the City
30	Wardlow School	42 single-family dwellings.	2.5 miles	In review by the City. On hold
31	Lamb School	61 single-family dwellings.	4.0 miles	In review by the City. On hold
32	Assisted Living	124-unit assisted living at 17200 Goldenwest Street.	6.7 miles	Approved by the City

TABLE 5-4 (CONTINUED)

NO.	PROJECT NAME AND LOCATION	MAJOR PROJECT FEATURES	APPROXIMATE DISTANCE FROM PROJECT SITE	STATUS
33	Fein Medical	6,500-square-foot medical office at 7922 Liberty Avenue.	4.9 miles	Entitlements approved
34	Longs Drugs	8,800-square-foot drug store at 17725 Beach Boulevard.	4.9 miles	Entitlements approved
35	Springdale Commercial	8,800-square-foot commercial center at 16161 Springdale Street.	8.3 miles	Under construction
36	Bella Terra Phase 2	Mixed-use with up to 468 dwelling units, 154,113-square-foot Costco, and up to 30,000 square feet of additional retail.	7.1 miles	GPA, Specific Plan amendment, and Site Plan Review in review by City
COSTA MESA				
PROJECTS LOCATED WITHIN 1 MILE OF PROJECT SITE				
There are no projects within the City of Costa Mesa located within 1 mile of the project site				
PROJECTS LOCATED MORE THAN 1 MILE FROM PROJECT SITE				
37	Lutheran Church - 760 Victoria Street	Parking lot remodel and 11,276 s.f alteration of existing church sanctuary.	3.5 miles	Completed within last 12to 18 months
38	The Crossing Church – 2115 Newport Boulevard	Construction of a new café and a 21,920-square-foot auditorium.	4.4 miles	In Plan Check
39	El Camino Dr. Development - 1011 El Camino Drive	24-unit residential development.	6.3 miles	Completed within last 12 to 18 months
40	Pacific Medical Plaza 1640 Newport Boulevard	4-story medical office building; 76,500-square-foot, three-level parking garage	4.9 miles	Complete
41	Seegerstrom Concert Hall and Samueli Theater	297,000 square feet, 2,000 seats in main concert hall, 500 seats in theater, 4,000-square-foot restaurant	9.5 miles	Complete
42	South Coast Home Furnishings Center – 3333 Hyland Avenue	Approximately 312,540 square feet: 163,505 square feet of full service furniture stores, 114,976 square feet of home accessories stores, 21,753 square feet of specialty retail stores, 12,753 square feet of food service stores	6.8 miles	Complete
43	Coast Community College District Admin Facilities – 1370 Adams Avenue	58,000 square feet of administration building facility space. Pursuing LEED Silver rating.	5.6 miles	Construction nearly complete
44	The Enclave Apartment Homes 400 Enclave Circle	890-unit, three-story apartment community on a 40-acre lot; 22 dwelling units per acre.	10.6 miles	Complete
45	Lakes at South Coast – 3400 Avenue of the Arts	Major renovation and reimagining of “The Lakes at South Coast” apartment complex: 770 apartment units on an 18.9-acre lot; 40.7 dwelling units per acre.	10.1 miles	Complete

TABLE 5-4 (CONTINUED)

NO.	PROJECT NAME AND LOCATION	MAJOR PROJECT FEATURES	APPROXIMATE DISTANCE FROM PROJECT SITE	STATUS
46	Stonethrow on Victoria – 372, 378, and 382 Victoria Street	Master Plan for 30 three-story detached homes on a 1.68-acre lot; 17.8 dwelling units per acre.	3.9 miles	Approved, not yet constructed
47	Emulex Corporate Headquarters – 3333 Susan Street	Master Plan approved for 14.15-acre office campus. New 65,435-square-foot, two-story office building. 237,611 square feet of corporate office space.	7.2 miles	Approved, not yet constructed
48	Triangle Square Renovation – 1870 Harbor Boulevard	Prominent shopping center in downtown Costa Mesa. Approximately 185,000 square feet of retail, restaurant, and entertainment uses. Façade enhancement and renovation proposed.	5.5 miles	Under construction
49	Westside Lofts – 1640 Monrovia Avenue	Master Plan approved for a mixed-use development on a 6.8-acre Brownfield site. 42,000 square feet of commercial use. 151 residential units, 5 live/work units, 4- to 5-level parking structure.	4.4 miles	Under construction
50	North Costa Mesa Towers (individual structures below)	Pacific Arts Plaza. The Californian. Symphony Towers. Segerstrom Town Center. Orange County Museum of Art. Wyndham Hotel.	9.4 to 10.4 miles	Approved, not yet constructed
51	Californian at Town Center – 580 Anton Boulevard	250 units. 2-acre site of Lakes Pavilions. 5-level, aboveground parking structure.	10.4 miles	Approved, not yet constructed
52	Symphony Towers – 585/595 Anton Boulevard	Two high-rise residential condominium towers. Tower 1: 26 stories. Tower 2: 16 stories. Two six-level parking structures with 1,040 parking stalls.	9.4 miles	Approved, not yet constructed
53	Wyndham Hotel – 3350 Avenue of the Arts	Boutique Hotel/High-rise residential. Hotel renovation: 200 rooms. 23-story high-rise residential tower.	10.0 miles	Approved, not yet constructed
NEWPORT BEACH				
PROJECTS LOCATED WITHIN 1 MILE OF PROJECT SITE				
There are no projects within the City of Newport Beach located within 1 mile of the project site				
PROJECTS LOCATED MORE THAN 1 MILE FROM PROJECT SITE				
54	Newport Beach Country Club – 1600 East Coast Highway	5 residential dwelling units, 27 hotel units with 2,048 gross-square-foot concierge and guest center, 3,523-gross-square-foot tennis club with 6,718 gross-square-foot spa, 41,086-gross-square-foot golf club with accessory facilities, 7 tennis courts and swimming pool.	7.2	
55	Mariner's Medical Arts – 1901 Westcliff Drive	12,245-gross-square-foot medical office addition.	6.3	
56	City Hall and Park Development -1100 Avocado Avenue	98,000-gross-square-foot City Hall, 17,135-gross-square-foot library expansion, 450-space parking structure, 15 acre park.	7.4	Draft EIR
57	WPI-Newport, LLC – 4699 Jamboree Rd/5190 Campus Drive	New office building and remodel of existing office and bank buildings to accommodate office space, bank, retail, and restaurant uses. New: 33,151 gross square feet (office – 41,181 net square feet/43,951 gross square feet; bank – 5,423 net square feet/5,744 gross square feet; retail – 2,140 net square	11.1, 9.6	

TABLE 5-4 (CONTINUED)

NO.	PROJECT NAME AND LOCATION	MAJOR PROJECT FEATURES	APPROXIMATE DISTANCE FROM PROJECT SITE	STATUS
		feet/2,214 gross square feet; restaurant – 2,130 net square feet/2,263 gross square feet/990 n.p.a. Existing: 21,023 gross square feet (office – 10,800 gross square feet, bank – 10,221 gross square feet).		
58	Banning Ranch – 4520 West Coast Highway	1,375 dwelling units, 75,000 gross square feet of commercial retail, 75-room accommodations, parks, and open space.	3.7	NOP out for public review
59	Sunset Ridge Park – 4850 West Coast Highway	13.67-acre active park.	3.7	Draft EIR
60	Old Newport GPA – 328-340 Old Newport Boulevard	New: 25,725-gross-square-foot medical office Existing Uses: 328- to 5,000–square-foot office; 332- to 3012–square-foot all medical; 340- to 5,000–square-foot general office, 1 residential dwelling unit.	4.1 – 4.2	Planning Commission hearing scheduled for Jan. 2010
61	Marina Park – 1700 Balboa Boulevard	10.45 acres public marina, beach, park with recreation facilities: Balboa Center Complex – 26,990 gross square feet; Visiting Vessel Marina – 23 slips; Marina Services Building (laundry, offices, etc.) – 1,328 gross square feet; Girl Scout House – 5,500 gross square feet; Parking – 153 spaces.	4.8	Draft EIR – Coastal Commission Review in Spring 2010
62	Pres Office Building B – 4300 Von Karman Avenue	16,742-gross-square-foot office (14,995-net-square-foot).	9.5	Planning stages
63	Conexant/Koll Conceptual Plan– 4311 Jamboree Road and 4343 Von Karman Avenue	New: 974 residential dwelling units, total (Conexant site - 714 dwelling units; Koll Site - 260 dwelling units). Existing: 167,000-gross-square-foot office; 269,000-gross-square-foot industrial	10, 9.6	Planning stages
64	AERIE – 201 Carnation Avenue	New: 6-unit condo with subterranean parking (25,500 cubic yards grading) Existing: 14-apartment dwelling units	8.0	Approved
65	Coast Community College District – 1505-1533 Monrovia Avenue	New: 67,000-gross-square-foot higher education learning center. Existing: 1505 to 1519: 3 sheds, 3600-gross-square-foot warehouse; 1527 to 1533: 10,000-gross-square-foot industrial and 19,574-gross-square-foot office.	4.1- 4.2	Planning stages

Land Use/Relevant Planning

The proposed project is not considered to represent a significant cumulative land use or relevant planning impact, as the project is consistent with the City of Huntington Beach General Plan.

All projects taking place within the cumulative impact study area would conform to local and regional land use plans as well as applicable planning regulations governing current and future development. Mitigation of cumulatively significant land use impacts are best accomplished by area-wide mitigation programs, conforming to the adopted zoning, and General Plan designations,

and implementing project-specific mitigation measures where appropriate. Therefore, it is not anticipated that development of cumulative projects will result in a significant cumulative impact.

Geology and Soils

Cumulative effects related to earth resources resulting from the proposed project and development in the vicinity of the proposed project include short-term increases in erosion due to excavation, backfilling, and grading activities. These impacts are anticipated to be mitigated by enforcing proper erosion protection measures during remediation and construction of the proposed project, and would be mitigated on a project-by-project basis. In addition, sites with unsuitable development conditions, such as liquefaction and seismic hazards, are best mitigated on an individual basis. The proposed project and all projects located within the cumulative impact study area would comply with the Uniform Building Code and all erosion control measures established by the city with applicable jurisdiction, including all erosion and sedimentation avoidance and reduction measures contained in regional stormwater permits and related plan and requirements. Following construction of several projects within the cumulative impact area, revegetation of previously excavated areas would take place and habitat would be restored, which would reduce the potential of soil erosion. Because each project would require specific mitigation in conformance with regional standards, the cumulative impacts on geology and soils resources would be less than significant.

Hydrology and Water Quality

Cumulative impacts with regards to hydrology and water quality would primarily result from off-site runoff containing urban pollutants, as the majority of the project site would be composed of impervious surfaces. However, as previously stated, the proposed desalination facility and all projects located within the cumulative impact study area would incorporate protection measures and/or site design BMPs to avoid hydrology and water quality impacts during operation. All site runoff would be directed to appropriate storm drains via an on-site local drainage system, ultimately being discharged into the Pacific Ocean via the HBGS outfall. In addition, impacts would be further minimized as the existing berm along the eastern perimeter of the project site (adjacent to the Huntington Beach Channel) would prevent runoff impacts to the adjacent wetlands to the southeast. The desalination facility's discharge into the Pacific Ocean is not considered a significant cumulative impact, as discussed in Section 4.3, Hydrology and Water Quality. Similar to the impacts on geology and soils, hydrology and water quality impacts resulting from development of cumulative projects would be regularly subject to application of consistent regulatory requirements that have been put in place to avoid and reduce significant effects on drainage and water quality. Therefore, it is not anticipated that development of cumulative projects would result in significant cumulative effects on hydrology and water quality.

Air Quality

The proposed project and other projects in the area will result in temporary air quality impacts from construction-related activities and vehicle emissions. Such activities could result in substantial temporary emissions of particulate matter (PM₁₀, PM_{2.5}) and carbon monoxide (CO). Because air quality is defined by geographic formations (i.e., a coastal plain surrounded by mountains) and bears little relationship to jurisdictional boundaries, the cumulative impact analysis study area for air quality consists of the South Coast Air Basin. The projects known to be planned or approved, or in construction during the preparation of this SEIR, are summarized in Table 5-4 and are part of

growth forecasts considered in regional air quality planning for purposes of evaluating long-term operational cumulative impacts.

SCAG and the South Coast Air Quality Management District prepared a regional air quality analysis as part of the 2008 Regional Transportation Plan (RTP). That analysis serves as a cumulative analysis of project impacts to regional air quality, because it incorporates all past, present and future planned development within the region. Currently the South Coast Air Basin is in non-attainment for ozone, PM₁₀, and PM_{2.5}; therefore, an existing cumulative ozone and PM₁₀/PM_{2.5} air pollution issue exists within the South Coast Air Basin. The proposed project itself would generate emissions from vehicle trips that would not exceed thresholds and would not include any permanent stationary sources. As discussed in Section 5.2, the proposed project would not induce population and/or employment growth and would therefore conform to the RTP. Therefore, the proposed project would not contribute in a cumulatively considerable manner to cumulative long-term air quality impacts, and impacts would be less than significant.

Because construction air quality impacts can tend to have a noticeable localized effect in addition to their contribution to the overall regional air basin, projects in close proximity to the proposed project site were evaluated for short-term, construction-related impacts. The pollutants generated from construction of these projects could result in an impact on ambient air quality that would overlap with those of the proposed project if the construction work occurs in close proximity and at the same time. Potentially significant and unmitigable short-term, construction-related impacts were identified that would contribute to potentially significant cumulative impacts. Therefore, short-term, construction-related air quality impacts, including the project's contribution to those impacts, are considered significant.

Climate Change

Changes in the global climate attributable to anthropogenic greenhouse gas emissions are cumulative effects of past, present, and future actions worldwide. While worldwide contributions of GHG emissions are expected to have environmental consequences, it is not possible to link particular changes to the environment of California to GHGs emitted from a particular source or location. However, when considering a project's contribution to impacts from climate change, it is possible to examine the quantity of GHG emissions that would be either directly or indirectly attributable to a project. An analysis of such project-level effects is presented in Section 4.12 of this SEIR.

Section 4.12 addresses the project's contribution to the cumulative effects of climate change based on guidance provided by the California Natural Resources Agency. As noted in Section 4.12, since the project design features and mitigation measures identified for the project would entirely offset the project's contribution to the cumulative effects of greenhouse gas emissions, the project's effects relative to greenhouse gas emissions and climate change are not cumulatively considerable.

Noise

As with the proposed project, cumulative projects would generate periodic increases in ambient noise levels in the project area during construction. Several cumulative projects in the surrounding area anticipate periodic noise levels in excess of established standards during construction, thereby exposing people and noise-sensitive receptors to these increased levels. Through mitigation measures, including conformance with construction noise restrictions through local ordinances,

these cumulative short-term impacts will be reduced to below a level of significance. Potential long-term noise associated with the proposed project would be generated by both mobile and stationary sources. Although cumulative development of the project vicinity is anticipated to result in increases in noise levels within the City, the project's long-term operational traffic noise is anticipated to be nominal, and on-site stationary noise sources would be properly attenuated. Therefore, the project's contribution to a potentially significant cumulative long-term noise impact would not be cumulatively considerable and would be less than significant (see Section 4.5, Noise).

Public Services and Utilities

The proposed desalination facility may have impacts on wastewater facilities due to the potential discharge of byproduct wastes associated with facility operation utilizing OCSD facilities. However, the OCSD would require a commercial/industrial connection fee, of which 5% would go to the City. Impacts in this regard have been adequately analyzed in previous documentation, as the proposed project would be in compliance with all General Plan and Zoning designations. Cumulative impacts are not anticipated to be significant in this regard. As discussed in Section 4.6, project-level impacts on other public services and utilities are less than significant and would not represent a cumulatively considerable contribution to any significant cumulative impacts.

Aesthetics/Light and Glare

Temporary construction impacts and facility operation would change the aesthetic character of the project site vicinity. The project site exists as a portion of a former fuel storage facility, with storage tanks 40 feet in height. The proposed project is expected to improve the overall aesthetic character of the site vicinity by replacing the storage tanks with multiple tilt-up buildings/structures. These structures would incorporate aesthetic enhancements (landscaping, screening, and aesthetically sensitive architecture) and are expected to enhance the overall aesthetic character of the site vicinity. In addition, the proposed desalination project may introduce new sources of lighting to the area. However, appropriate mitigation measures to prevent the occurrence of significant amounts of light spillover would be incorporated into site design. All structures associated with the proposed project would comply with City standards with regards to building height, densities, and landscaping. Additionally, several projects located within the cumulative impact study area include plans for parks recreational facilities construction and expansion, and/or on-site landscaping associated with development projects. These site design features and parks improvements will positively augment the area's existing scenic resources and improve the aesthetic character of the region. Therefore, when combined with current and reasonably foreseeable future projects, the proposed project would not generate cumulatively significant aesthetic impacts within the surrounding area.

Hazards and Hazardous Materials

The proposed project has positive public health and safety effects due to remediation of the former fuel storage tank facility. Cumulatively, other project sites that are constrained due to site contamination would require remediation on a case-by-case basis, including the Magnolia Pacific Specific Plan, which plans to develop on the previous Ascon/Nesi Landfill; and the Edison Community Center (located at 21377 Magnolia Street, north of Hamilton Avenue and outside of the pipeline construction route), which would pursue mitigation for methane issues currently affecting the site. Remediation activities would be done in accordance with applicable health and safety regulations. The proposed project may have local impacts in regards to hazards and hazardous

materials through various chemicals associated with facility operation. However, all hazardous materials would be used, stored, and transported according to all Occupational Safety and Health Administration (OSHA) and Environmental Protection Agency (EPA) regulations. Therefore, it is not anticipated that cumulative impacts related to hazards and hazardous materials would be significant.

Construction-Related Biological Resources (Terrestrial Only)

Implementation of the proposed off-site OC-44 underground booster pump station may have impacts on biological resources. The site is currently undeveloped and includes 0.5 acre of native vegetation known to support numerous species of wildlife and may include areas within the jurisdiction of the ACOE or CDFG according to Appendix B, Results of the Biological Constraints Survey for the OC-44 Underground Booster Pump Station Project Site, of the SEIR. Construction of the proposed pump station has the potential to impact biological resources. However, mitigation measures are included to ensure that avoidance of direct impacts is accomplished with final design (refer to Mitigation Measures CON-38 through CON-46 in Section 4.9, Construction). Once built, the pump station would be placed entirely underground and would be subject to development restrictions protecting the integrity of on-site biological resources.

Neither of the optional OC-44 underground booster pump station sites contains sensitive species or habitats, and neither has jurisdictional wetlands/waters. Therefore, the project would not have a substantial adverse effect on candidate, sensitive, or special-status species, nor would it affect any federally protected wetlands. Therefore impacts at the optional sites would be less than significant. Regulatory compliance during project construction would ensure that project-related construction activities would minimize cumulative impacts to less-than-significant levels. In addition, cumulative projects would undergo separate environmental review.

Construction-Related Traffic

As discussed in Section 4.9, implementation of the proposed project may cause short-term, construction-related traffic impacts. The demolition, remediation, and construction process would generate traffic in the site vicinity through on-site construction worker vehicle trips and truck trips. Construction truck trips to and from the project site would utilize routes that would minimize impacts, and impacts would be further avoided and minimized through use of traffic control measures.

Pipeline construction for product water delivery would also require temporary disruption along public streets, as the majority of the pipeline is proposed to be installed within existing street right of way (ROW) utilizing open trench construction methods. Adequate staging areas would be provided for both open trench and trenchless construction in order to minimize the amount of traffic disruption. Pipeline construction may conflict with remediation activities at the Ascon landfill site. A Draft Interim Removal Measure Workplan for the landfill (California Department of Toxic Substance Control 2009) identifies the various routes of travel for trucks entering and exiting the landfill site. The proposed routes include Newland Street and Hamilton Street, both of which will involve construction of the proposed water delivery pipelines. It is anticipated that there will be overlap between construction of the pipelines and material hauling from the landfill. Both projects will be required to maintain traffic control plans, but coordination between the two efforts will be important. With the possibility of simultaneous project construction and landfill remediation, there is the potential for significant impacts on traffic and circulation, and mitigation is required. With the

mitigation measure identified in Section 4.9, localized impacts resulting from cumulative construction impacts of the project and the Ascon landfill remediation would be less than significant.

Since the timeframe for construction of the project and associated water delivery pipelines is relatively short, and since pipeline construction would proceed relatively quickly through each segment being constructed, it is not anticipated that a substantial increase in current traffic levels resulting from other cumulative development will occur prior to completion of project construction. Therefore, temporary traffic impacts associated with the project will cease prior to substantial cumulative traffic impacts being realized on local roadways. Therefore, the project is not anticipated to result in a cumulatively considerable contribution to any significant cumulative traffic impacts.

Construction-Related Cultural Resources

According to CEQA, the importance of cultural resources comes from their research value and the information that they contain. Therefore, the issue that must be explored in a cumulative analysis is the cumulative loss of information. For sites considered less than significant, the information is preserved through recordation and test excavations. Significant sites that are placed in open space easements avoid impacts to cultural resources and also preserve the data. Significant sites that are not placed within open space easements preserve the information through recordation, test excavations, and data recovery programs.

The cumulative impacts analysis for cultural resources considered the area surrounding the proposed desalination facility and off-site facilities, and specifically the projects listed in Table 5-4. Impacts to cultural resources related to cumulative development that occurs within the areas surrounding the desalination facility and associated off-site facilities could be significant if significant cultural resources are destroyed as a result of development. Section 4.9 provides a comprehensive summary of all potential project impacts to cultural resources, as a result of the records search, literature review, and field survey conducted for the proposed project. The project would not result in any significant impacts on cultural resources, and therefore would not represent a cumulatively considerable contribution to any significant cumulative impact,

Product Water Quality

The product water from the seawater desalination facility would be suitable for delivery through the existing water distribution system and would be comparable to and compatible with the other water sources currently delivering water to the same system (see Section 4.11, Product Water Quality). Thus, cumulative impacts would be less than significant.

Regional Cumulative Impact Analysis

As stated above, the “regional” analysis focuses on cumulative impacts as a result of implementation of the proposed desalination facility, along with other proposed desalination facilities and other existing and proposed developments, along the Southern California coast. Other developments along the coast include ports, industrial uses, wastewater treatment facilities, etc., all of which could result in regional cumulative impacts (i.e., marine biology, growth-inducement, and air quality from power production), including impacts to the Southern California Bight.

For purposes of this analysis, a qualitative discussion of regional cumulative impacts is provided for existing and proposed developments along the coastline. Accordingly, it is not practical or

reasonable to analyze all existing and proposed development along the coastline. Although a comprehensive list of regional projects that could result in cumulative impacts, especially to the Southern California Bight, is not provided, this analysis assumes that planned desalination facilities along the coastline comprise a portion of the cumulative projects that would contribute to regional cumulative impacts. Thus, a listing of the planned desalination facilities is provided below. The “regional” cumulative impact analysis includes an evaluation of impacts regarding marine biology/water quality within the Southern California Bight, growth-inducement potential, and power production.

Regional Cumulative Projects

Projects that may result in regional cumulative impacts include existing and/or planned developments along the California coast that could exceed planned growth estimates, contribute to impacts to the Southern California Bight, and/or result in substantial demands on local power sources, resulting in additional water or air pollution. The analysis of cumulative projects refers to the inclusion of all existing and planned developments along the coast, including ports, wastewater treatment facilities, industrial uses, etc., as well as planned desalination facilities. Table 5-5, Proposed Desalination Facilities along the Southern California Coast, provides a list of planned desalination facilities.

**TABLE 5-5
 PROPOSED DESALINATION FACILITIES ALONG THE SOUTHERN CALIFORNIA COAST**

OPERATOR/LOCATION	PURPOSE, AND PUBLIC OR PRIVATE	MAXIMUM CAPACITY	STATUS
City of San Buenaventura	Municipal/domestic Public	Not known	Not known
Long Beach Water Department/Long Beach	Research Public	300,000 gallons per day (gpd)/ 335 acre-feet per year (AF/yr)	Design phase – pilot plant is operational
Long Beach Water Department/Long Beach	Municipal/domestic Public	10 million gpd/ 11,000 AF/yr	Planning
Los Angeles Department of Water and Power	Municipal/domestic Public	10 million gpd/ 11,000 AF/yr	Planning – project is currently on hold
Municipal Water District of Orange County/Dana Point	Municipal/domestic Public	27 million gpd/ 30,000 AF/yr	Planning – pilot plant is operational
Poseidon Resources/City of Huntington Beach	Various Private	50 million gpd/ 55,000 AF/yr.	Draft SEIR under review
San Diego County Water Authority/ Camp Pendleton Marine Corps Base	Municipal/domestic Public	50 million to 150 million gpd/ 55,000 to 165,000 AF/yr	Planning/Feasibility Study
San Diego County Water Authority and Poseidon Resources/City of Carlsbad	Municipal/domestic Public/private	50 million gpd/ 55,000 AF/yr	Under Construction
West Basin Municipal Water District	Municipal/domestic Public	20 million gpd/ 22,000 AF/yr	Planning – Pilot plant operational
Total Proposed Production	~ 207million gallons per day/ 357,000 AF/yr		

Growth-Inducing Impacts

As discussed in Section 5.2, Growth Inducing Impacts of the Proposed Action, the proposed project would not foster growth in excess of that already assumed and projected in pertinent planning documents. Moreover, existing water supply plans already project that seawater desalination would play a necessary role in meeting projected future demands. Accordingly, the growth-inducing impacts of the project are not significant. Each incremental development would be required to comply with the goals and policies of the applicable General Plan or other planning documents for the proposed project area. Thus, potential growth-inducing cumulative impacts would be less than significant. Refer to Section 5.2 for further detail regarding growth-inducing impacts as a result of project implementation.

Ocean Water Quality and Marine Biological Resources

The Southern California Bight is a region that includes coastal Southern California, the Channel Islands, and the local portion of the Pacific Ocean. The small portion of the Pacific Ocean that occupies this region, from Point Conception in the north to just past San Diego in the south, and extending offshore of San Nicolas Island, is the temporary or permanent home to a wide variety of marine organisms.

Impacting this coastal marine ecosystem are the millions of people who reside in the Los Angeles and San Diego metropolitan areas, as well as the Mexican residents who inhabit the Tijuana/San Diego border region of the Bight. The tremendous population of Southern California, coupled with the activities necessary to sustain and/or enhance their existence, results in a significant quantity and variety of pollutants that enter coastal waters. The Pacific Ocean within the Southern California Bight area receives pollutants from a wide variety of sources. Most pollution within the Bight is derived from land, from water runoff after a rainfall event, from the outfall pipes of wastewater treatment facilities, or from the water discharges of electrical power plants. Such runoff can introduce a mix of industrial and organic pollutants to coastal waters. Additionally, substantial amounts of refuse also make their way into rivers or bays via roadway gutters. Harbor/port activities also contribute pollution to the Southern California Bight. Combined, the ports of Long Beach and Los Angeles compose one of the busiest port systems in the nation. Though stringent guidelines are in place to protect the coastal environment, pollution from ships, from the ports' terminals, and from the Los Angeles River is an ongoing problem. Discharge from the ballast tanks of ships, though illegal, does occur. Such vessels, arriving from distant ports of call, can introduce exotic species of plants and animals, causing disruption of the local food web. Discharges rich in nitrogen can generate the rapid growth of plankton, eventually leading to a condition known as red tide that is lethal to some coastal organisms.

Implementation of the proposed project may contribute to long-term impacts to water quality and marine biological sources. However, as stated in Section 4.10, Ocean Water Quality and Marine Biological Resources, all potentially significant impacts to long-term water quality and marine biological sources would be reduced to less-than-significant levels through regulatory compliance, project design features, and implementation of the recommended mitigation measures pertaining to hydrology and water quality. The following discussion describes the potential for cumulative impacts to the Southern California Bight.

As discussed in Section 4.10, oceanographers from the Scripps Institution of Oceanography conducted modeling simulating ocean conditions near the HBGS intake and outfall. The model

calculates the degree of mixing of various potential contaminant sources with the Pacific Ocean. The Santa Ana River, Talbert Marsh, OCSD wastewater discharge outfall, and proposed desalination facility discharge were all investigated. Seawater contamination resulting from any of the above sources could potentially impact the quality of product water and, to some degree, the quality of byproduct concentrated seawater to be discharged from the HBGS outfall. The model results show the amount of dilution of each of these sources of pollutants under different oceanographic conditions. The results of the model concluded that long-term water quality impacts to the Pacific Ocean would be less than significant. Additionally, the analysis concluded that the mixture of the proposed facility's concentrated seawater discharge with the HBGS cooling water discharge would not result in salinity increases that would significantly impact marine biological resources. The analysis to marine biological resources also concludes that plankton entrained in the discharge stream are likely to be killed as much by the turbulence and temperature of the discharge (which would occur even without proposed project implementation) as by the salinity increase. Thus, no significant increase in plankton loss is expected from the addition of the byproduct water to the discharge stream.

Since implementation of the proposed project would result in less-than-significant impacts to ocean water quality and marine life, the analysis of cumulative impacts must include an analysis of the expected environmental effects to be produced by other cumulative projects. As shown in Table 5-5, 11, desalination facilities are currently being proposed along the Southern California coast that would contribute to cumulative impacts associated with the proposed project. Seawater desalination projects outside of Southern California (approximately 11 are proposed) have no potential to interact with the proposed project. Additionally, existing and proposed ports, wastewater treatment facilities, industrial uses, etc., along the coast would contribute to cumulative impacts. The proposed desalination facilities and other anthropogenic uses would be required to ensure that the objectives and goals defined in the California Ocean Plan and the *Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California* are met on a project-by-project basis. These plans identify water quality goals and objectives that pertain to:

- Thermal characteristics (control of temperature in the coastal and interstate waters and enclosed bays and estuaries of California (Thermal Plan))
- Bacterial characteristics, physical characteristics (i.e., visible floating particulates, grease, oil, and discoloration)
- Chemical characteristics (i.e., dissolved oxygen concentration, pH, amounts of dissolved sulfide, nutrient materials, and other harmful substances)
- Biological characteristics (i.e., effects to marine communities, including vertebrate, invertebrate, and plant species)
- Radioactivity (radioactive waste discharge).

Because each proposed desalination facility would have unique design and siting characteristics, each is likely to be subject to a different set of California Coastal Act policies and would likely conform to those policies in different ways. Determining whether a proposed desalination project would conform to the California Coastal Act would therefore be done on a case-by-case basis. Furthermore, based

upon the siting of a desalination facility, it would be necessary to conduct an evaluation of the Best Available Control Technology (BACT) (i.e., immersion filters, bafflers, screens to minimize larvae intake, etc.) to minimize impacts to water quality and marine biological resources.

The physical effect of desalting seawater by reverse osmosis is in principle no different than the effects of evaporation. Ocean surveys of the Southern California Bight have measured evaporative losses at 93.4 centimeters per year. The surface area of the coastal waters inside the continental margin of the Southern California Bight is approximately 160,000 square kilometers. Factoring in evaporation over the surface area, it is concluded that the coastal area of the Southern California Bight loses 1.49×10^{11} cubic meters of pure water constituent from the coastal ocean each year. In contrast, a desalination facility producing product water at a rate of 50 mgd will extract 6.9×10^7 cubic meters of pure water constituent of water from the coastal ocean in 1 year's time. Consequently, it would take 2,163 fifty mgd desalination facilities to match the natural evaporative losses from the ocean in the Southern California Bight (Dr. Scott A. Jenkins Consulting 2010).

Appendix Y, Marine Biological Issues for the Huntington Beach Desalination Project and Other Desalination Facilities, contains an analysis and compilation of studies and information from currently operating desalination facilities around the world to determine the effects of elevated salinity levels. The study found that the Huntington Beach desalination facility's strategy of avoiding impacts by adequately diluting and dispersing the concentrated seawater is consistent with practices of other plants. Review of recently published information about the collective worldwide experience with the operation of large seawater desalination plants in Australia and at Tampa Bay (US) indicates a positive track record for minimizing the potential effects of seawater concentrate discharge.

An increased awareness of the environmental impact of discharging undiluted seawater concentrate into coastal waters has prompted monitoring studies of this effect in existing plants as well as increased attention to this issue in both the design and placement of desalination facilities. Prior experience shows that the discharge of concentrated seawater into shallow coastal areas that are not well ventilated by tidal or wind-driven circulation may cause elevation of coastal salinity and may affect the biota occurring in the discharge area. By contrast, in cases where the discharge is either diluted (as it is in the case of the Huntington Beach facility) or lessened by mixing with the receiving water, the effects are either reduced or are not present at all.

When viewed in conjunction with other proposed desalination facilities and anthropogenic uses planned for the Southern California coast, the potential degradation of marine biological resources and long-term water quality could be considered a negative cumulative impact. However, given the dispersion and physical distance from the proposed desalination facility to other Southern California desalination facilities, there would not be any overlapping. Furthermore, the proposed project includes mitigation measures relevant to the preparation of a Water Quality Management Plan (WQMP), specifically identifying BMPs, a site-specific hydrology and hydraulic analysis, and installation of an on-site storm drainage system to ensure that long-term water quality impacts would be less than significant. Additionally, potential impacts of cumulative projects would be site-specific, and an evaluation of potential impacts would be conducted on a project-by-project basis. This would be especially true of those developments located in areas that contain sensitive species and habitat. Each incremental development would be required to comply with all applicable local, state, and federal regulations concerning the protection of biological resources and degradation of water quality. In consideration of these regulations, potential cumulative impacts upon ocean water quality and marine biological resources are considered less than significant under both co-located and stand-alone operating conditions for the project.

Related to this analysis is a cumulative effects analysis conducted by the SWRCB. At page 35 of the March 22, 2010, Draft Final Substitute Environmental Document prepared by the SWRCB for its proposed Water Control Policy on the use of Coastal and Estuarine Waters for Power Plant Cooling, the SWRCB examined the effects of continuation of the baseline conditions for once-through-cooling water intake by coastal power plants. The study found that cumulative impacts are especially important in the Southern California Bight where many power plants are situated within several miles from each other. The SWRCB noted a study performed by MBC and Tenera in 2005 which estimated that, for 12 coastal power plants in the Southern California Bight, there is an overall cumulative entrainment mortality of up to 1.4% of the larval fishes in the Bight. In the same study, for eleven coastal power plants in the same area, the estimated cumulative impingement was approximately 3.6 million fish. Considering only recreational fish species, impingement was somewhere between 8% and 30% of the number of fish caught in the Southern California Bight. If the SWRCB policy is adopted and implemented as currently contemplated, these impacts would be expected to reduce over time.

Power Production

Information regarding power production is based upon the *Huntington Beach Desalination Project Report on Local and Regional Power Requirements and Generation Resources* (Navigant Consulting, Inc. 2004, Appendix G,, Local and Regional Electric Power Requirements and Generation Resources, to the SEIR). According to this report, the estimated load for the proposed project is 30 to 35 MW, and it is anticipated that it would be operating at this level unless the HBGS conducts its heat treatment process.

Southern California Edison (SCE) and other utilities routinely develop forecasts of electrical loads on their systems. Most times the publicly available information resulting from these forecasts is aggregated such that the only data available are that for the load served from the major substations or on a system-wide basis. The assessment of impacts to power production as a result of project implementation has been based upon the following:

- Extracted information on the estimated amounts of power delivered through each of SCE's major 230 and 115-kilovolt (kV) substations (SCE 2004).
- Information regarding the total peak loads on the systems of the Los Angeles Department of Water and Power (LADWP), the other municipal utilities in the Los Angeles Basin, and the Imperial Irrigation District (Navigant Consulting, Inc. 2002).

The SCE system in the Los Angeles Basin consists of:

- A 230 kV transmission network that delivers power to a number of 230/66 kV substations
- 66 kV lines that interconnect the 230 kV substations with numerous 66 kV substations from which the power is delivered to lower voltage facilities that ultimately serve the load.

Table 5-6, SCE 230 kV Substations' Serving Load in Orange County, contains information relative to the location of the 230 kV substations, as well as estimates of the amount of the total SCE load in Orange County, that is served from each substation. In addition to SCE substations listed in Table

5-6, the Lewis 230/66 kV Substation, located in Anaheim, serves the electrical load in the City of Anaheim.

TABLE 5-6
SCE 230 KV SUBSTATIONS' SERVING LOAD IN ORANGE COUNTY

SUBSTATION	LOCATION (CITY)	% OF COUNTY LOAD SERVED
Alamitos	Long Beach	<1
Barre	Stanton	20
Del Amo	Cerritos	1
Ellis	Huntington Beach	18
Johanna	Santa Ana	12
Olinda	La Habra	7
Santiago	East Irvine	23
Villa Park	Orange	19

The information discussed above was also used to develop the information in Table 5-7, Summary of Estimated Loads (Megawatts), relative to estimated loads for the years 2008 to 2013 in the Huntington Beach area, Orange County, the Los Angeles Basin, and Southern California.

TABLE 5-7
SUMMARY OF ESTIMATED LOADS (MEGAWATTS)

	YEAR					
	2008	2009	2010	2011	2012	2013
Huntington Beach Area Load	390	393	397	402	408	413
ORANGE COUNTY LOAD						
SCE	3,870	3,920	3,980	4,030	4,100	4,140
City of Anaheim	575	585	600	610	620	635
Total Orange County	4,445	4,505	4,580	4,640	4,720	4,775
LOS ANGELES BASIN LOAD						
SCE	14,470	14,640	14,720	14,820	15,060	15,230
LADWP	6,240	6,310	6,370	6,420	6,470	6,520
Other Municipal Utilities ¹	2,170	2,200	2,240	2,290	2,330	2,380
Total Los Angeles Basin	22,880	23,150	23,330	23,530	23,860	24,130
SOUTHERN CALIFORNIA LOAD						
SCE System Load	21,150	21,460	21,800	22,130	22,520	22,840
SDG&E Load	4,460	4,570	4,680	4,800	4,920	5,040
LADWP Load	6,240	6,310	6,370	6,420	6,470	6,520
Other Municipal Utilities	2,170	2,200	2,240	2,290	2,330	2,380
Imperial irrigation District	850	870	890	900	920	940
Total Southern California	34,870	35,410	35,980	36,540	37,160	37,720

¹ Anaheim, Azuza, Banning, Burbank, Colton, Glendale, Pasadena, and Riverside.

As noted above, the project load is anticipated to be as much as 35 megawatts starting in the fourth quarter of 2013. Table 5-8, Change in Estimated Loads due to Addition of the Project (%), presents information on the amounts by which the estimated loads summarized in Table 5-7 would increase when a 35-megawatt project load is added to them. Table 5-8 shows that the addition of the 35-megawatt project load would increase the demand for electric energy in the Huntington Beach area by approximately 9%. However, the impact of the addition of this load on the demand for electric energy in Orange County or Southern California is insignificant (less than 1%). Thus, impacts would be less than significant.

TABLE 5-8
CHANGE IN ESTIMATED LOADS DUE TO ADDITION OF THE PROJECT (%)

	YEAR					
	2008	2009	2010	2011	2012	2013
Huntington Beach Area Load	9.0	8.9	8.8	8.7	8.6	8.5
Orange County Load	0.8	0.8	0.8	0.8	0.7	0.7
Los Angeles Basin Load	0.2	0.2	0.2	0.2	0.2	0.2
Southern California Load	0.1	0.1	0.1	0.1	0.1	0.1

In addition, a report published by the National Resources Defense Council (NRDC) and Pacific Institute states that the California State Water Project is the single largest user of energy in California, utilizing 2% to 3% of all electricity consumed in the state (NRDC and Pacific Institute 2004). This electricity consumption is necessary to lift water 2,000 feet over the Tehachapi Mountains (the highest lift of any water system in the world). Operation of the Colorado River Aqueduct adds to the electricity consumed in pumping water to Southern California.

As stated in Section 4.4, Air Quality, imported water and desalinated water require in excess of 3,000 kilowatt hours (kWh) per acre-foot for production and distribution. The energy required to import water is expected to remain fairly static, while the energy required to desalinate seawater is expected to continue to decrease. The proposed desalinated water has the potential to replace a given water provider's water curtailed from the State Water Project along the East Branch; then the power requirements to move imported water through the Central Valley, over the Tehachapi Mountains, and into the Los Angeles Basin could result in substantial power reductions, thus resulting in air quality offsets. Whereas the proposed facility under the co-located scenario has an "all in" power rate of 4,449 kWh per acre-foot for producing water and conveyance into the Orange County system (California Department of Water Resources 1998), the State Water Project has a power rate of 3,200 kWh per acre-foot (net of hydroelectric power production in the Los Angeles Basin). As such, there is only a 1,249 kWh per acre foot increase (or an additional 194 megawatts per day) in energy consumption over current supplies into the MWD's Diemer water treatment facility. Under the stand-alone scenario, the facility would have a power rate of 4,776 kWh per acre-foot, which would result in an increase of 242 megawatts per day as compared to the energy used to import the same amount of water.

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